=> fil reg FILE 'REGISTRY' ENTERED AT 18:09:08 ON 13 FEB 2003 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2003 American Chemical Society (ACS)

Property values tagged with IC are from the  ${\tt ZIC/VINITI}$  data file provided by InfoChem.

STRUCTURE FILE UPDATES: 12 FEB 2003 HIGHEST RN 489395-53-1 DICTIONARY FILE UPDATES: 12 FEB 2003 HIGHEST RN 489395-53-1

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when conducting  ${\tt SmartSELECT}$  searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details: http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> d sta que 13 L1 STR

Jan Delavai
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 – 703-308-/-98
jan.delaval@uspto.gov

VAR G1=O/S/N NODE ATTRIBUTES: DEFAULT MLEVEL IS ATOM DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES: RING(S) ARE ISOLATED OR EMBEDDED NUMBER OF NODES IS 23

STEREO ATTRIBUTES: NONE
L3 83 SEA FILE=REGISTRY SSS FUL L1

100.0% PROCESSED 119 ITERATIONS SEARCH TIME: 00.00.01

83 ANSWERS

=> d his

(FILE 'HOME' ENTERED AT 18:03:54 ON 13 FEB 2003) SET COST OFF

```
FILE 'REGISTRY' ENTERED AT 18:04:02 ON 13 FEB 2003
                STR
L1
              3 S L1
L2
             83 S L1 FUL
L3
                 SAV L3 SACKEY008/A
              12 S L3 AND CARBAMIC ACID
L4
              71 S L3 NOT L4
L5
     FILE 'HCAOLD' ENTERED AT 18:07:41 ON 13 FEB 2003
               0 S L5
L6
               0 S L4
L7
     FILE 'HCAPLUS' ENTERED AT 18:07:48 ON 13 FEB 2003
               5 S L5
L8
               4 S L4
L9
               4 S L10 AND (BOYKIN ? OR TIDWELL ? OR WILSON ? OR PERFECT ? OR ST
L10
L11
               5 S L10, L11
L12
     FILE 'USPATFULL, USPAT2' ENTERED AT 18:08:46 ON 13 FEB 2003
               1 S L5
L13
               1 S L4
 L14
               1 S L13, L14
 L15
      FILE 'REGISTRY' ENTERED AT 18:09:08 ON 13 FEB 2003
 => fil uspatall
 FILE 'USPATFULL' ENTERED AT 18:09:16 ON 13 FEB 2003
 CA INDEXING COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)
 FILE 'USPAT2' ENTERED AT 18:09:16 ON 13 FEB 2003
 CA INDEXING COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)
 => d 115 bib abs hitstr
 L15 ANSWER 1 OF 1 USPATFULL
         2002:280652 USPATFULL
         Reversed amidines and methods of using for treating, preventing, or
 ΑN
 TI
         inhibiting leishmaniasis
         Werbovetz, Karl A., Worthington, OH, UNITED STATES Brendle, James J., Beltsville, MD, UNITED STATES
  IN
         Boykin, David W., Atlanta, GA, UNITED STATES
         Stephens, Chad E., Villa Rica, GA, UNITED STATES
                                  20021024
         US 2002156098
                             A1
  PI
                                   20011105 (9)
                             Α1
         US 2001-985590
  ΑI
                             20010504 (60)
         US 2001-288428P
  PRAI
                              20001107 (60)
         US 2000-246330P
                              20001106 (60)
         US 2000-246244P
         Utility
  DΨ
         ATTN: MCMR-JA (Ms. Elizabeth Arwine), Office of the Staff Judge
  FS
         Advocate, U.S. Army Medical Research and Material Command, 504 Scott
  LREP
         Street, Fort Detrick ATTN: MCMR-JA (Ms. Elizabet, MD, 21702-5012
          Number of Claims: 31
  CLMN
          Exemplary Claim: 1
  ECL
          9 Drawing Page(s)
  DRWN
  LN.CNT 2211
  CAS INDEXING IS AVAILABLE FOR THIS PATENT.
          Methods for treating, preventing or inhibiting leishmaniasis in a
          subject comprising administering to the subject a therapeutically
   AB
          effective amount of at least one compound having the structural formula
          ##STR1##
```

wherein Y is a heteroatom; R.sup.1 and R.sup.2 are independently H or an alkyl, cycloalkyl, heterocycloalkyl, aryl, amino or heteroaryl group; and X.sup.1, X.sup.2, and X.sup.3 are independently H or an alkyl, alkoxy, halo, amino, alkylamino, dialkylamino, acylamino, alkylthio, sulfonyl, cyano, carboxy, alkoxycarbonyl, or carbamoyl group are disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 423165-60-0P 423165-63-3P 423165-65-5P

423165-67-7P 423165-70-2P 423165-73-5P

(prepn. and reaction; reversed amidines for treating, preventing, or inhibiting leishmaniasis)

423165-60-0 USPATFULL RN

Carbamic acid, [2,5-furandiylbis[(3-ethoxy-4,1phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

423165-63-3 USPATFULL RN

Carbamic acid, [2,5-furandiylbis[[3-(1-methylethoxy)-4,1phenylene]nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

423165-65-5 USPATFULL RN

Carbamic acid, [2,5-furandiylbis[(2-methoxy-4,1-CN phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

423165-67-7 USPATFULL RN

Carbamic acid, [2,5-furandiylbis[(2-ethoxy-4,1phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

423165-70-2 USPATFULL RN

Carbamic acid, [2,5-thiophenediylbis[(3-methyl-4,1phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

423165-73-5 USPATFULL RN

Carbamic acid, [2,5-thiophenediylbis(4,1-phenylenenitrilomethanetetrayl)]t CN etrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

347191-02-0P

(reversed amidines for treating, preventing, or inhibiting leishmaniasis)

347191-02-0 USPATFULL RN

Benzenecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis- (9CI) CN (CA INDEX NAME)

IT 347190-99-2P 347191-03-1P 347191-04-2P

347191-07-5P 347191-09-7P 347191-14-4P

347191-16-6P 347191-18-8P 347191-20-2P

423165-06-4P 423165-09-7P 423165-22-4P 423165-25-7P 423165-28-0P 423165-29-1P

423165-31-5P 423165-62-2P

(reversed amidines for treating, preventing, or inhibiting

leishmaniasis)

347190-99-2 USPATFULL

2-Pyridinecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis- (9CI) RNCN(CA INDEX NAME)

347191-03-1 USPATFULL

Benzenecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-, RN CNdihydrochloride (9CI) (CA INDEX NAME)

### 1 2 HCl

347191-04-2 USPATFULL

Cyclohexanecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-RN CN (9CI) (CA INDEX NAME)

RN 347191-07-5 USPATFULL
CN Benzenecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

RN 347191-09-7 USPATFULL
CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4;1-phenylene)]bis- (9CI) (CA INDEX NAME)

RN 347191-14-4 USPATFULL CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis[5-methyl- (9CI) (CA INDEX NAME)

RN 347191-16-6 USPATFULL CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methoxy-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

347191-18-8 USPATFULL 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-chloro-4,1-RN CN phenylene)]bis- (9CI) (CA INDEX NAME)

347191-20-2 USPATFULL

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3,5-dimethyl-4,1-RN CNphenylene)]bis- (9CI) (CA INDEX NAME)

423165-06-4 USPATFULL

Ethanimidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis- (9CI) (CA INDEX RN CNNAME)

423165-09-7 USPATFULL RN

2-Quinolinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-CN phenylene)]bis- (9CI) (CA INDEX NAME)

RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis[3-(1-methylethoxy)-4,1phenylene]]bis- (9CI) (CA INDEX NAME) CN

423165-25-7 USPATFULL

Guanidine, N,N'''-[2,5-furandiylbis(3-ethoxy-4,1-phenylene)]bis- (9CI) RN CN (CA INDEX NAME)

423165-28-0 USPATFULL Guanidine, N,N'''-[2,5-furandiylbis(2-ethoxy-4,1-phenylene)]bis- (9CI) RN CN (CA INDEX NAME)

423165-29-1 USPATFULL

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(2-methoxy-4,1-RN phenylene)]bis- (9CI) (CA INDEX NAME) CN

Guanidine, N,N'''-(2,5-thiophenediyldi-4,1-phenylene)bis- (9CI) (CA INDEX RN CN

Guanidine, N,N'''-[2,5-furandiylbis[3-(1-methylethoxy)-4,1-phenylene]]bis-RN CN (9CI) (CA INDEX NAME)

423165-10-0 423165-11-1 423165-12-2 IT 423165-16-6 423165-17-7 423165-18-8

423165-19-9 423165-20-2 423165-21-3

423165-23-5 423165-24-6 423165-26-8

423165-27-9 423165-30-4

(reversed amidines for treating, preventing, or inhibiting leishmaniasis)

RN

Guanidine, N,N'''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis- (9CI) CN(CA INDEX NAME)

$$\begin{array}{c|c} NH & NH \\ \parallel & \parallel \\ H_2N-C-NH & NH-C-NH_2 \\ \hline Me & Me \end{array}$$

RN

Guanidine, N,N'''-[2,5-furandiylbis[3-(trifluoromethyl)-4,1-phenylene]]bis-CN (9CI) (CA INDEX NAME)

RN

2-Pyridinecarboximidamide, N,N''-[2,5-thiophenediylbis(3-methyl-4,1phenylene)]bis- (9CI) (CA INDEX NAME) CN

Guanidine, N,N'''-[2,5-furandiylbis(3,5-dimethyl-4,1-phenylene)]bis- (9CI) RN CN (CA INDEX NAME)

423165-17-7 USPATFULL

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-ethoxy-4,1-RN phenylene)]bis- (9CI) (CA INDEX NAME) CN

423165-18-8 USPATFULL

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(2,3-dimethyl-4,1-RN phenylene)]bis- (9CI) (CA INDEX NAME) CN

Guanidine, N,N'''-[2,5-furandiylbis(2,3-dimethyl-4,1-phenylene)]bis- (9CI) RN CN (CA INDEX NAME)

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-RN phenylene)]bis[6-methyl- (9CI) (CA INDEX NAME) CN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-hydroxy-4,1-RN phenylene)]bis- (9CI) (CA INDEX NAME) CN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis[3-(1-methylethoxy)-4,1-RN . 423165-23-5 USPATFULL phenylene]]bis[5-methyl- (9CI) (CA INDEX NAME) CN

RN 423165-24-6 USPATFULL CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(2-ethoxy-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

RN 423165-26-8 USPATFULL
CN Guanidine, N,N'''-[2,5-furandiylbis(3-propoxy-4,1-phenylene)]bis- (9CI)
(CA INDEX NAME)

RN 423165-27-9 USPATFULL
CN Guanidine, N,N'''-[2,5-furandiylbis(2-methoxy-4,1-phenylene)]bis- (9CI)
(CA INDEX NAME)

RN 423165-30-4 USPATFULL CN Guanidine, N,N'''-[2,5-thiophenediylbis(3-methyl-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

347191-00-8P 347191-05-3P 347191-08-6P ΙT

347191-11-1P 347191-15-5P 347191-17-7P

347191-19-9P 347191-21-3P 423165-54-2P

423165-55-3P 423165-56-4P 423165-57-5P

423165-58-6P 423165-59-7P 423165-61-1P

423165-64-4P 423165-66-6P 423165-69-9P

423165-71-3P 423165-74-6P

(reversed amidines for treating, preventing, or inhibiting

leishmaniasis)

RN

2-Pyridinecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-, CN

hydrochloride (2:7) (9CI) (CA INDEX NAME)

## ●7/2 HCl

Cyclohexanecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-, RN dihydrochloride (9CI) (CA INDEX NAME) CN

## HCl

RN

Benzenecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME) CN

$$\begin{array}{c|c} NH & NH \\ \parallel & NH-C-Ph \\ \hline \\ Me & Me \end{array}$$

# ●2 HC1

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1phenylene)]bis-, hydrochloride (2:7) (9CI) (CA INDEX NAME) RNCN

# ●7/2 HCl

RN

CN

CN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1phenylene)]bis[5-methyl-, hydrochloride (4:13) (9CI) (CA INDEX NAME)

# ●13/4 HCl

RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methoxy-4,1phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

## ●2 HCl

347191-19-9 USPATFULL

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-chloro-4,1-RN phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME) CN

## ●2 HCl

RN

347191-21-3 USPATFULL 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3,5-dimethyl-4,1phenylene)]bis-, hydrochloride (4:15) (9CI) (CA INDEX NAME) CN

## ●15/4 HCl

423165-54-2 USPATFULL

2-Quinolinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-RN phenylene) | bis-, dihydrochloride (9CI) (CA INDEX NAME) CN

### ●2 HC1

RN 423165-55-3 USPATFULL CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis[3-(1-methylethoxy)-4,1-phenylene]]bis-, dihydrochloride (9CI) (CA INDEX NAME)

## ●2 HCl

### ●2 HCl

RN 423165-57-5 USPATFULL
CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(2-ethoxy-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

## ●2 HCl

RN 423165-58-6 USPATFULL CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(2-methoxy-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

### ●2 HCl

RN 423165-59-7 USPATFULL CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-hydroxy-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

## ●2 HCl

RN 423165-61-1 USPATFULL CN Guanidine, N,N'''-[2,5-furandiylbis(3-ethoxy-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

## ●2 HCl

RN 423165-64-4 USPATFULL Guanidine, N,N'''-[2,5-furandiylbis[3-(1-methylethoxy)-4,1-phenylene]]bis-, dihydrochloride (9CI) (CA INDEX NAME)

## ●2 HCl

RN 423165-66-6 USPATFULL
CN Guanidine, N,N'''-[2,5-furandiylbis(2-methoxy-4,1-phenylene)]bis-,
dihydrochloride (9CI) (CA INDEX NAME)

### ●2 HCl

RN 423165-69-9 USPATFULL CN Guanidine, N,N'''-[2,5-furandiylbis(2-ethoxy-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

### •2 HCl

RN 423165-71-3 USPATFULL CN Guanidine, N,N'''-[2,5-thiophenediylbis(3-methyl-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

## ●2 HCl

RN 423165-74-6 USPATFULL CN Guanidine, N,N'''-(2,5-thiophenediyldi-4,1-phenylene)bis-, dihydrochloride (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} NH & NH \\ \parallel & \parallel \\ NH-C-NH_2 \end{array}$$

## ●2 HCl

=> fil hcaplus FILE 'HCAPLUS' ENTERED AT 18:09:29 ON 13 FEB 2003 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December

26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 13 Feb 2003 VOL 138 ISS 7 FILE LAST UPDATED: 12 Feb 2003 (20030212/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all hitstr tot 112

```
ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2003 ACS
```

2002:555455 HCAPLUS ΑN

DN 137:109199

Preparation of bis(amidino- and guanidinophenyl)furans and analogs as ΤI microbicides

Boykin, David; Tidwell, Richard R.; Wilson, W. ΙN David; Perfect, John R.; Stephens, Chad E.

University of North Carolina at Chapel Hill, USA; Georgia State University PΑ Research Foundation, Inc.

PCT Int. Appl., 36 pp. SO CODEN: PIXXD2

DT Patent

English

ICM C07D IC

27-6 (Heterocyclic Compounds (One Hetero Atom)) Section cross-reference(s): 1

FAN.CNT 2

```
APPLICATION NO. DATE
                              KIND DATE
       PATENT NO.
                                                             WO 2001-US47238 20011106
                                         20020725
                               A2
       WO 2002057224
РΤ
            W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
                  CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CU, CV
             RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
                   DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
                   BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                                                               US 2001-985590
                                                                                      20011105
                                         20021024
                                Α1
       US 2002156098
                               P
                                         20001106
PRAI US 2000-246244P
                                 Ρ
                                         20001107
       US 2000-246330P
                                         20010504
                                Ρ
       US 2001-288428P
       MARPAT 137:109199
OS
       Z[Z1NHC(:NR5)R6]2 [I; R5 = H, alkyl, aryl; R6 = H, alkyl, aryl, NR7R8;
AB
```

R7, R8 = H, alkyl, aryl; Z = furan-, thiophene-, or pyrrole-2,5-diyl; Z1 = (un) substituted 1,4-phenylene] were prepd. Thus, 2,5bis(tributylstannyl)furan was condensed with 2-bromo-5-nitrotoluene and the product reduced to give 2,5-bis(4-amino-2-methylphenyl)furan. Similarly prepd. 2,5-bis(4-aminophenyl) furan was amidated by BzCl and the product converted in 2 steps to I (R5 = H, R6 = Ph, Z = furan-2,5-diyl, Z1= 1,4-phenylene). Data for biol. activity of I were given.

amidinophenylfuran prepn microbicide; bactericide amidinophenylfuran prepn; fungicide amidinophenylfuran prepn; protozoacide amidinophenylfuran ST prepn

ΙT Aspergillus Candida albicans

```
Cryptococcus neoformans
    Cryptosporidium parvum
    Fusarium solani
    Giardia lamblia
    Mycobacterium tuberculosis
    Plasmodium (malarial genus)
    Pneumocystis carinii
    Toxoplasma gondii
     Trypanosoma
        (infection; treatment; prepn. of bis(amidino- and
        guanidinophenyl) furans and analogs as microbicides)
     Antibacterial agents
IT
     Fungicides
     Human
        (prepn. of bis(amidino- and guanidinophenyl) furans and analogs as
     Protozoacides
        microbicides)
     347190-93-6P 347190-94-7P 347190-95-8P
ΙT
     347190-96-9P 347190-97-0P 347190-98-1P
     347190-99-2P 347191-00-8P 347191-02-0P
     347191-03-1P 347191-04-2P 347191-05-3P
     347191-06-4P 347191-07-5P 347191-08-6P
     347191-09-7P 347191-11-1P 347191-14-4P
     347191-15-5P 347191-16-6P 347191-17-7P
     347191-18-8P 347191-19-9P 347191-20-2P
     347191-21-3P 423165-09-7P 423165-12-2P
     423165-54-2P 443797-77-1P 443797-78-2P
     443797-79-3P 443797-80-6P 443797-81-7P
     RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU
      (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES
         (prepn. of bis(amidino- and guanidinophenyl) furans and analogs as
      (Uses)
         microbicides)
                                 100-70-9, 2-Cyanopyridine
                                                               874 - 60 - 2,
      98-88-4, Benzoyl chloride
                                 939-26-4, 2-(Bromomethyl)naphthalene
 ΙT
      4-Methylbenzoyl chloride
                                            7149-70-4, 2-Bromo-5-nitrotoluene
      1620-77-5, 2-Cyano-5-methylpyridine
      193361-76-1, 2,5-Bis(tributylstannyl)furan
      RL: RCT (Reactant); RACT (Reactant or reagent)
         (prepn. of bis(amidino- and guanidinophenyl) furans and analogs as
      5346-38-3P, 2-Thiocarbamoylpyridine 53715-17-6P 56297-30-4P,
                                                                   347190-78-7P
 ΙT
                                    251577-90-9P
      2,5-Bis(4-nitrophenyl)furan
                                                                   347190-83-4P
                                                    347190-82-3P
                                     347190-81-2P
                      347190-80-1P
      347190-79-8P
                                     347190-86-7P 347190-87-8P
                      347190-85-6P
      347190-84-5P
      347190-88-9P 347190-89-0P 347190-90-3P
                                                  347191-10-0P
      347190-91-4P 347190-92-5P 347191-01-9P
                                                                    443797-82-8P
                                                    347191-25-7P
                                     347191-24-6P
      RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
          (prepn. of bis(amidino- and guanidinophenyl) furans and analogs as
       (Reactant or reagent)
          microbicides)
       347190-93-6P 347190-94-7P 347190-95-8P
       347190-96-9P 347190-97-0P 347190-98-1P
       347190-99-2P 347191-00-8P 347191-02-0P
       347191-03-1P 347191-04-2P 347191-05-3P
       347191-06-4P 347191-07-5P 347191-08-6P
       347191-09-7P 347191-11-1P 347191-14-4P
       347191-15-5P 347191-16-6P 347191-17-7P
       347191-18-8P 347191-19-9P 347191-20-2P
       347191-21-3P 423165-09-7P 423165-12-2P
       423165-54-2P 443797-77-1P 443797-78-2P
       443797-79-3P 443797-80-6P 443797-81-7P
```

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of bis(amidino- and guanidinophenyl) furans and analogs as microbicides)

347190-93-6 HCAPLUS

Guanidine, N,N'''-(2,5-furandiyldi-4,1-phenylene) bis-, dihydrochloride RN CN (9CI) (CA INDEX NAME)

### 2 HCl

347190-94-7 HCAPLUS Guanidine, N,N'''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis-, RN CN dihydrochloride (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} NH & NH \\ \parallel \\ H_2N-C-NH & NH-C-NH_2 \\ \hline \\ Me & Me \end{array}$$

### ●2 HCl

Guanidine, N,N'''-[2,5-furandiylbis(3-methoxy-4,1-phenylene)]bis-, 347190-95-8 HCAPLUS RN CN dihydrochloride (9CI) (CA INDEX NAME)

### HCl

### ●2 HCl

RN 347190-97-0 HCAPLUS
CN Guanidine, N,N'''-[2,5-furandiylbis[3-(trifluoromethyl)-4,1-phenylene]]bis, dihydrochloride (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} NH & NH \\ \parallel & NH-C-NH_2 \\ \hline \\ CF3 & CF3 \end{array}$$

## ●2 HCl

RN 347190-98-1 HCAPLUS CN Guanidine, N,N'''-[2,5-furandiylbis(3,5-dimethyl-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

### ●2 HCl

RN 347190-99-2 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis- (9CI) (CA INDEX NAME)

RN

2-Pyridinecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-, hydrochloride (2:7) (9CI) (CA INDEX NAME) CN

# ●7/2 HCl

Benzenecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis- (9CI) RNCN (CA INDEX NAME)

Benzenecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-, RN dihydrochloride (9CI) (CA INDEX NAME) CN

## ●2 HCl

RN

Cyclohexanecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-347191-04-2 HCAPLUS CN (9CI) (CA INDEX NAME)

Cyclohexanecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-, RN dihydrochloride (9CI) (CA INDEX NAME) CN

## ●2 HCl

Ethanimidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-, dihydrobromide RN CN (9CI) (CA INDEX NAME)

## ●2 HBr

Benzenecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-RN CN phenylene)]bis- (9CI) (CA INDEX NAME)

Benzenecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-347191-08-6 HCAPLUS RN phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME) CN

## •2 HCl

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-RN CN phenylene)]bis- (9CI) (CA INDEX NAME)

347191-11-1 HCAPLUS 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-RNphenylene)]bis-, hydrochloride (2:7) (9CI) (CA INDEX NAME) CN

# ●7/2 HCl

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-RNphenylene)]bis[5-methyl- (9CI) (CA INDEX NAME) CN

RN

CN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1phenylene)]bis[5-methyl-, hydrochloride (4:13) (9CI) (CA INDEX NAME)

Me 
$$NH-C$$
  $NH-C$   $NH-C$ 

# ●13/4 HCl

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methoxy-4,1-RNphenylene)]bis- (9CI) (CA INDEX NAME) CN

RN

CN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methoxy-4,1phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

# ●2 HCl

RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-chloro-4,1phenylene)]bis- (9CI) (CA INDEX NAME) CN

RN 347191-19-9 HCAPLUS
CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-chloro-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

## ●2 HCl

RN 347191-20-2 HCAPLUS
CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3,5-dimethyl-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

RN 347191-21-3 HCAPLUS
CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3,5-dimethyl-4,1-phenylene)]bis-, hydrochloride (4:15) (9CI) (CA INDEX NAME)

2-Quinolinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-RN phenylene)]bis- (9CI) (CA INDEX NAME) CN

RN

2-Pyridinecarboximidamide, N,N''-[2,5-thiophenediylbis(3-methyl-4,1phenylene)]bis- (9CI) (CA INDEX NAME) CN

2-Quinolinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-423165-54-2 HCAPLUS RN phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME) CN

●2 HCl

Benzenecarboximidamide, N,N''-(2,5-thiophenediyldi-4,1-phenylene)bis-RNCN (9CI) (CA INDEX NAME)

RN 443797-78-2 HCAPLUS
CN Benzenecarboximidamide, N,N''-(2,5-thiophenediyldi-4,1-phenylene)bis-,
dihydrochloride (9CI) (CA INDEX NAME)

## ●2 HC1

RN 443797-79-3 HCAPLUS
2-Pyridinecarboximidamide, N,N''-[2,5-thiophenediylbis(3-methyl-4,1-phenylene)]bis-, hydrochloride (2:5) (9CI) (CA INDEX NAME)

# ●5/2 HCl

RN 443797-80-6 HCAPLUS
CN Benzenecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis[4-methyl, dihydrochloride (9CI) (CA INDEX NAME)

●2 HCl

Benzenecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis[4-methyl-RN CN (CA INDEX NAME)

- NH- C Me ΝН

Ethanimidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis-, RN CN dihydrobromide (9CI) (CA INDEX NAME)

●2 HBr

347190-87-8P 347190-88-9P 347190-89-0P IT

347190-90-3P 347190-91-4P 347190-92-5P RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)

(prepn. of bis(amidino- and guanidinophenyl) furans and analogs as microbicides)

Carbamic acid, [2,5-furandiylbis(4,1-phenylenenitrilomethanetetrayl)]tetra RNkis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME) CN

347190-88-9 HCAPLUS RN

Carbamic acid, [2,5-furandiylbis[(3-methyl-4,1phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

347190-89-0 HCAPLUS Carbamic acid, [2,5-furandiylbis[(3-methoxy-4,1-RN phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

RN

347190-90-3 HCAPLUS Carbamic acid, [2,5-furandiylbis[(3-chloro-4,1phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

347190-91-4 HCAPLUS RN

Carbamic acid, [2,5-furandiylbis[[3-(trifluoromethyl)-4,1phenylene]nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

347190-92-5 HCAPLUS

RN Carbamic acid, [2,5-furandiylbis[(3,5-dimethyl-4,1phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2003 ACS L12

2002:539483 HCAPLUS AN

Compounds useful for the treatment of bovine viral diarrhea virus and DN TΙ hepatitis C virus infections

Boykin, David; Tidwell, Richard R.; Stringfellow, David; Brock, Kenny; Stephens, Chad E.; Kumar, Arvind; ΙN Wilson, W. David; Givens, Daniel; Dykstra, Christine

University of North Carolina At Chapel Hill, USA; Georgia State University PΑ

```
Research Foundation; Auburn University
    PCT Int. Appl., 68 pp.
SO
    CODEN: PIXXD2
    Patent
DT
    English
LA
     ICM A61K
IC
     1-5 (Pharmacology)
     Section cross-reference(s): 28
                                        APPLICATION NO. DATE
FAN.CNT 1
                     KIND DATE
     PATENT NO.
                                         _____
                                        WO 2002-US787
                                                          20020111
                           20020718
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
     WO 2002055025
PΙ
            PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,
         BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                           20010113
 PRAI US 2001-261654P
     The invention relates to novel compds. and methods that are useful in
     treating members of the Flaviviridae family of viruses. Compds. disclosed
 AΒ
      in the invention are shown to be effective against bovine viral diarrhea
      virus and hepatitis C virus infection.
      antiviral cattle diarrhea virus hepatitis C infection
 ST
      Antiviral agents
 ΙT
      Bovine diarrhea virus
      Cattle
      Embryo, animal
      Flaviviridae
      Hepatitis C virus
         (compds. for treatment of bovine viral diarrhea virus infection and
      Human
         hepatitis C virus infection)
         (injections, i.v.; compds. for treatment of bovine viral diarrhea virus
      Drug delivery systems
 IT
         infection and hepatitis C virus infection)
          (oral; compds. for treatment of bovine viral diarrhea virus infection
      Drug delivery systems
  IT
         and hepatitis C virus infection)
       423165-10-0 423165-11-1 423165-30-4
  IT
                                               433735-90-1
                    433735-86-5 433735-89-8
                                                             442842-44-6
       423165-31-5
                                               442842-43-5
                                  442842-42-4
                    442842-41-3
       442842-40-2
                                               442842-48-0
                                  442842-47-9
                   442842-46-8
       442842-45-7
       442842-49-1 442842-50-4
       RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
       (Biological study); USES (Uses)
          (compds. for treatment of bovine viral diarrhea virus infection and
          hepatitis C virus infection)
                                               7147-77-5, 5-(4-
       95-54-5, 1,2-Phenylenediamine, reactions
                             7149-70-4, 2-Bromo-5-nitrotoluene 52130-32-2,
  IT
       5-(4-Cyanophenyl)-2-furancarboxaldehyde 68662-17-9 68827-43-0,
       4-Amidino-1, 2-phenylenediamine 148344-30-3
       RL: RCT (Reactant); RACT (Reactant or reagent)
          (compds. for treatment of bovine viral diarrhea virus infection and
          hepatitis C virus infection)
                                                               347190-78-7P
                                                332360-11-9P
                                 251577-90-9P
                    56297-30-4P
                                                                 347190-83-4P
       53715-17-6P
                                    347190-81-2P 347190-82-3P
   IT
                      347190-80-1P
       347190-79-8P
                                    347190-86-7P 347190-87-8P
                      347190-85-6P
       347190-84-5P
```

sackey - 10 / 008535 347190-88-9P 347190-89-0P 347190-90-3P 442842-54-8P **347190-91-4P 347190-92-5P** 442842-52-6P RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (compds. for treatment of bovine viral diarrhea virus infection and (Reactant or reagent) hepatitis C virus infection) 347190-93-6P 347190-94-7P 347190-95-8P 347190-96-9P 347190-97-0P 347190-98-1P 442842-55**-**9P 442842-53-7P 442842-51-5P RL: SPN (Synthetic preparation); PREP (Preparation) (compds. for treatment of bovine viral diarrhea virus infection and hepatitis C virus infection) RL: BSU (Biological study, unclassified); BIOL (Biological study) (in immunoassay; compds. for treatment of bovine viral diarrhea virus infection and hepatitis C virus infection) 443408-65-9 443408-64-8 443408-63-7 (unclaimed nucleotide sequence; compds. useful for the treatment of RL: PRP (Properties) bovine viral diarrhea virus and hepatitis C virus infections) 423165-10-0 423165-11-1 423165-30-4 423165-31-5 442842-45-7 442842-49-1 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (compds. for treatment of bovine viral diarrhea virus infection and hepatitis C virus infection)

(CA INDEX NAME)

ΙT

ΙT

IT

ΙT

RN CN

> RN 423165-11-1 HCAPLUS CN Guanidine, N,N'''-[2,5-furandiylbis[3-(trifluoromethyl)-4,1-phenylene]]bis-(9CI) (CA INDEX NAME)

Guanidine, N,N'''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis- (9CI)

$$\begin{array}{c|c} NH & NH \\ \parallel & NH - C - NH \\ \hline \\ CF_3 & CF_3 \end{array}$$

RN 423165-30-4 HCAPLUS CN Guanidine, N,N'''-[2,5-thiophenediylbis(3-methyl-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

RN 423165-31-5 HCAPLUS CN Guanidine, N,N'''-(2,5-thiophenediyldi-4,1-phenylene)bis- (9CI) (CA INDEX NAME)

RN 442842-45-7 HCAPLUS CN Guanidine, N,N'''-(2,5-furandiyldi-4,1-phenylene)bis- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} NH & NH \\ \parallel & \parallel \\ H_2N-C-NH & NH-C-NH_2 \end{array}$$

RN 442842-49-1 HCAPLUS
CN Guanidine, N,N'''-[2,5-furandiylbis(3-chloro-4,1-phenylene)]bis- (9CI)
(CA INDEX NAME)

RN 442842-50-4 HCAPLUS
CN Guanidine, N,N'''-[2,5-furandiylbis(3-methoxy-4,1-phenylene)]bis- (9CI)
(CA INDEX NAME)

347190-87-8P 347190-88-9P 347190-89-0P IT 347190-90-3P 347190-91-4P 347190-92-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(compds. for treatment of bovine viral diarrhea virus infection and hepatitis C virus infection)

347190-87-8 HCAPLUS RN

Carbamic acid, [2,5-furandiylbis(4,1-phenylenenitrilomethanetetrayl)]tetra CN kis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

347190-88-9 HCAPLUS RN

Carbamic acid, [2,5-furandiylbis[(3-methyl-4,1phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

347190-89-0 HCAPLUS

RNCarbamic acid, [2,5-furandiylbis[(3-methoxy-4,1phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

347190-90-3 HCAPLUS RN

Carbamic acid, [2,5-furandiylbis[(3-chloro-4,1phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CNester (9CI) (CA INDEX NAME)

347190-91-4 HCAPLUS RN

Carbamic acid, [2,5-furandiylbis[[3-(trifluoromethyl)-4,1phenylene]nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

347190-92-5 HCAPLUS RN

Carbamic acid, [2,5-furandiylbis[(3,5-dimethyl-4,1phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

347190-93-6P 347190-94-7P 347190-95-8P IT 347190-96-9P 347190-97-0P 347190-98-1P

RL: SPN (Synthetic preparation); PREP (Preparation) (compds. for treatment of bovine viral diarrhea virus infection and hepatitis C virus infection)

Guanidine, N,N'''-(2,5-furandiyldi-4,1-phenylene) bis-, dihydrochloride RN CN (9CI) (CA INDEX NAME)

### ●2 HCl

347190-94-7 HCAPLUS Guanidine, N,N'''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis-, RN CNdihydrochloride (9CI) (CA INDEX NAME)

# ●2 HC1

347190-95-8 HCAPLUS Guanidine, N,N'''-[2,5-furandiylbis(3-methoxy-4,1-phenylene)]bis-, RN CN dihydrochloride (9CI) (CA INDEX NAME)

RN 347190-96-9 HCAPLUS CN Guanidine, N,N'''-[2,5-furandiylbis(3-chloro-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

# ●2 HCl

RN 347190-97-0 HCAPLUS
CN Guanidine, N,N'''-[2,5-furandiylbis[3-(trifluoromethyl)-4,1-phenylene]]bis, dihydrochloride (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} NH & NH \\ \parallel \\ H_2N-C-NH \\ \hline \\ CF_3 & CF_3 \end{array}$$

## ●2 HCl

RN 347190-98-1 HCAPLUS CN Guanidine, N,N'''-[2,5-furandiylbis(3,5-dimethyl-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

```
L12 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2003 ACS
       2002:353451 HCAPLUS
ΑN
       Reversed amidines and methods of using them for treating, preventing, or
DN
ΤI
       inhibiting leishmaniasis
       Werbovetz, Karl A.; Brendle, James J.; Boykin, David W.;
ΙN
       Stephens, Chad E.
       U.S. Army Medical Research and Materiel Command, USA
PΑ
       PCT Int. Appl., 67 pp.
SO
       CODEN: PIXXD2
DT
        Patent
LA
        English
       ICM C07D405-00
IC
        1-5 (Pharmacology)
CC
FAN.CNT 2
                                                                APPLICATION NO.
                                                                                         DATE
                                 KIND
                                          DATE
        PATENT NO.
                                                                _____
        _____
                                          _____
                                                              WO 2001-US42905 20011105
                                          20020510
        WO 2002036588
                                A2
              W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 PΙ
                   AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BK, BI, BZ, CA, CN, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, LS, LT, LU, LV, MA, MD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, CM, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, CM, CM, VE, IS, MM, MZ, SD, SI, SZ, TZ, UG, ZW, AT, BE, CH, CY,
              RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
                    BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
                                                              AU 2002-32400
                                           20020515
                                 A5
        AU 2002032400
                                                                                          20011105
                                                                 US 2001-985590
                                           20021024
                                   Α1
        US 2002156098
                                           20001106
                                   Ρ
 PRAI US 2000-246277P
                                           20001107
         US 2000-246330P
                                   Ρ
                                           20010504
                                   Ρ
         US 2001-288428P
                                           20001106
                                   Ρ
         US 2000-246244P
                                           20011105
         WO 2001-US42905
                                   W
         MARPAT 136:363813
  OS
  GΙ
```

Methods are disclosed for treating, preventing or inhibiting leishmaniasis in a subject which comprise administering to the subject a therapeutically AΒ effective amt. of at least one compd. I (Y = heteroatom; R1, R2 = H, alkyl, cycloalkyl, heterocycloalkyl, aryl, amino, heteroaryl; X1, X2, X3 = H, alkyl, alkoxy, halo, amino, alkylamino, dialkylamino, acylamino, alkylthio, sulfonyl, cyano, carboxy, alkoxycarbonyl, carbamoyl).

heterocyclic deriv reversed amidine leishmaniasis treatment; furan deriv reversed amidine leishmaniasis treatment; thiophene deriv reversed amidine STleishmaniasis treatment

ΙT Leishmania

(leishmaniasis from, cutaneous or mucocutaneous or visceral; reversed amidines for treating, preventing, or inhibiting leishmaniasis)

Protozoacides IT

(leishmanicides; reversed amidines for treating, preventing, or inhibiting leishmaniasis)

Drug delivery systems IT

Leishmania

Leishmania donovani

Leishmania mexicana

Parasiticides

(reversed amidines for treating, preventing, or inhibiting leishmaniasis)

ΙT

RL: BSU (Biological study, unclassified); BIOL (Biological study) (reversed amidines for treating, preventing, or inhibiting leishmaniasis)

101793-47-9P 56297-30-4P 57279-70-6P 53715-17-6P 7035-69-0P IT 347190-80-1P 347190-79-8P 347190-78-7P 251577-90-9P 103966-66-1P 347190-86-7P 347190-84-5P 347190-83-4P 347190-82-3P 347190-81-2P 423165-37-1P 423165-36-0P 423165-35-9P 423165-34-8P 423165-32-6P 423165-50-8P 423165-49-5P 423165-48-4P 423165-42-8P 423165-39-3P 423165-52-0P **423165-60-0P 423165-63-3P** 423165-51-9P 423165-65-5P 423165-67-7P 423165-70-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. and reaction; reversed amidines for treating, preventing, or inhibiting leishmaniasis)

98-88-4, Benzoyl chloride 75-30-9, 2-Iodopropane 2-Bromo-5-nitrobenzotrifluoride 586-78-7, 4-Bromonitrobenzene TΤ 7149-70-4, 6345-68-2 610-38-8, 4-Bromo-1,2-dinitrobenzene 29682-39-1, 1-Bromo-2-chloro-4-nitrobenzene 2-Bromo-5-nitrotoluene 52427-05-1, 2-Bromo-5-nitrophenol 53906-84-6 70010-49-0 193361-76-1 2-Bromo-5-nitroanisole 145483-63-2 180002-24-8 347191-23-5 347191-24-6 347191-22-4 347191-10-0 215175-55-6 423165-53-1 423165-33-7

RL: RCT (Reactant); RACT (Reactant or reagent) (reaction; reversed amidines for treating, preventing, or inhibiting leishmaniasis)

IT

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP

```
(Preparation); RACT (Reactant or reagent); USES (Uses)
        (reversed amidines for treating, preventing, or inhibiting
       leishmaniasis)
     347190-99-2P 347191-03-1P 347191-04-2P
IT
     347191-07-5P 347191-09-7P 347191-14-4P
     347191-16-6P 347191-18-8P 347191-20-2P
     423165-06-4P 423165-09-7P 423165-22-4P
     423165-25-7P 423165-28-0P 423165-29-1P
     423165-31-5P 423165-62-2P
     RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU
     (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES
     (Uses)
        (reversed amidines for treating, preventing, or inhibiting
        leishmaniasis)
     423165-10-0 423165-11-1 423165-12-2
TΤ
                  423165-15-5 423165-16-6 423165-17-7
     423165-14-4
     423165-18-8 423165-19-9 423165-20-2
     423165-21-3 423165-23-5 423165-24-6
     423165-26-8 423165-27-9 423165-30-4
     423165-75-7
     RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
     (Biological study); USES (Uses)
        (reversed amidines for treating, preventing, or inhibiting
        leishmaniasis)
     347190-85-6P 347191-00-8P 347191-05-3P
TΤ
     347191-08-6P 347191-11-1P 347191-15-5P
     347191-17-7P 347191-19-9P 347191-21-3P
     423165-54-2P 423165-55-3P 423165-56-4P
     423165-57-5P 423165-58-6P 423165-59-7P
     423165-61-1P 423165-64-4P 423165-66-6P
     423165-69-9P 423165-71-3P 423165-74-6P
     RL: SPN (Synthetic preparation); PREP (Preparation)
         (reversed amidines for treating, preventing, or inhibiting
        leishmaniasis)
     100-33-4, Pentamidine 133-51-7, Meglumine antimoniate
                                                                1397-89-3,
IT
                      6284-40-8D, Meglumine, antimonite salts 7542-37-2,
     Amphotericin B
                  16037-91-5, Sodium stibogluconate 58066-85-6, Miltefosine
     Paromomycin
     RL: PAC (Pharmacological activity); THÚ (Therapeutic use); BIOL
      (Biological study); USES (Uses)
         (reversed amidines for treating, preventing, or inhibiting
         leishmaniasis, and use with other agents)
     423165-60-0P 423165-63-3P 423165-65-5P
IT
      423165-67-7P 423165-70-2P 423165-73-5P
     RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
      (Reactant or reagent)
         (prepn. and reaction; reversed amidines for treating, preventing, or
         inhibiting leishmaniasis)
      423165-60-0 HCAPLUS
 RN
      Carbamic acid, [2,5-furandiylbis[(3-ethoxy-4,1-
 CN
     phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl)
      ester (9CI) (CA INDEX NAME)
```

423165-63-3 HCAPLUS RN

Carbamic acid, [2,5-furandiylbis[[3-(1-methylethoxy)-4,1-CN phenylene]nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

423165-65-5 HCAPLUS RN

Carbamic acid, [2,5-furandiylbis[(2-methoxy-4,1-CN phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

423165-67-7 HCAPLUS RN

Carbamic acid, [2,5-furandiylbis[(2-ethoxy-4,1-CN phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

423165-70-2 HCAPLUS RN

Carbamic acid, [2,5-thiophenediylbis[(3-methyl-4,1phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

423165-73-5 HCAPLUS

Carbamic acid, [2,5-thiophenediylbis(4,1-phenylenenitrilomethanetetrayl)]t RN etrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME) CN

347191-02-0P ΙT

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (reversed amidines for treating, preventing, or inhibiting

leishmaniasis)

347191-02-0 HCAPLUS RN

Benzenecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis- (9CI) CN (CA INDEX NAME)

347190-99-2P 347191-03-1P 347191-04-2P IT 347191-07-5P 347191-09-7P 347191-14-4P 347191-16-6P 347191-18-8P 347191-20-2P 423165-06-4P 423165-09-7P 423165-22-4P 423165-25-7P 423165-28-0P 423165-29-1P 423165-31-5P 423165-62-2P RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (reversed amidines for treating, preventing, or inhibiting (Uses)

leishmaniasis)

2-Pyridinecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis- (9CI) RNCN(CA INDEX NAME)

347191-03-1 HCAPLUS Benzenecarboximidamide, N, N''-(2, 5-furandiyldi-4, 1-phenylene)bis-, RN CN dihydrochloride (9CI) (CA INDEX NAME)

#### ●2 HCl

Cyclohexanecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-347191-04-2 HCAPLUS RN CN (9CI) (CA INDEX NAME)

RN 347191-07-5 HCAPLUS
CN Benzenecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

RN 347191-09-7 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

RN 347191-14-4 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis[5-methyl- (9CI) (CA INDEX NAME)

RN 347191-16-6 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methoxy-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

RN 347191-18-8 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-chloro-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

RN 347191-20-2 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3,5-dimethyl-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

RN 423165-06-4 HCAPLUS CN Ethanimidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis- (9CI) (CA INDEX NAME)

RN 423165-09-7 HCAPLUS
CN 2-Quinolinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

423165-22-4 HCAPLUS RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis[3-(1-methylethoxy)-4,1-CN phenylene]]bis- (9CI) (CA INDEX NAME)

423165-25-7 HCAPLUS

RNGuanidine, N,N'''-[2,5-furandiylbis(3-ethoxy-4,1-phenylene)]bis- (9CI) CN (CA INDEX NAME)

423165-28-0 HCAPLUS RN

Guanidine, N,N'''-[2,5-furandiylbis(2-ethoxy-4,1-phenylene)]bis- (9CI) CN (CA INDEX NAME)

423165-29-1 HCAPLUS RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(2-methoxy-4,1-CN phenylene)]bis- (9CI) (CA INDEX NAME)

RN 423165-31-5 HCAPLUS CN Guanidine, N,N'''-(2,5-thiophenediyldi-4,1-phenylene)bis- (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} NH & NH \\ \parallel & \parallel \\ H_2N-C-NH & NH-C-NH_2 \end{array}$$

RN 423165-62-2 HCAPLUS CN Guanidine, N,N'''-[2,5-furandiylbis[3-(1-methylethoxy)-4,1-phenylene]]bis-(9CI) (CA INDEX NAME)

$$\begin{array}{c|c} NH & NH \\ \parallel & \parallel \\ H_2N-C-NH & NH-C-NH_2 \\ \hline \\ OPr-i & OPr-i \\ \end{array}$$

$$\begin{array}{c|c} NH & NH \\ \parallel & \parallel \\ H_2N-C-NH & NH-C-NH_2 \\ \hline \\ Me & Me \end{array}$$

RN 423165-11-1 HCAPLUS

Guanidine, N,N'''-[2,5-furandiylbis[3-(trifluoromethyl)-4,1-phenylene]]bis-CN (9CI) (CA INDEX NAME)

423165-12-2 HCAPLUS RN

2-Pyridinecarboximidamide, N,N''-[2,5-thiophenediylbis(3-methyl-4,1-CN phenylene)]bis- (9CI) (CA INDEX NAME)

423165-16-6 HCAPLUS

RN Guanidine, N,N'''-[2,5-furandiylbis(3,5-dimethyl-4,1-phenylene)]bis- (9CI) CN (CA INDEX NAME)

423165-17-7 HCAPLUS RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-ethoxy-4,1-CN phenylene)]bis- (9CI) (CA INDEX NAME)

423165-18-8 HCAPLUS RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(2,3-dimethyl-4,1-CN

phenylene)]bis- (9CI) (CA INDEX NAME)

423165-19-9 HCAPLUS RN Guanidine, N,N'''-[2,5-furandiylbis(2,3-dimethyl-4,1-phenylene)]bis- (9CI) CN(CA INDEX NAME)

423165-20-2 HCAPLUS RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis[6-methyl- (9CI) (CA INDEX NAME) CN

423165-21-3 HCAPLUS RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-hydroxy-4,1-CN phenylene)]bis- (9CI) (CA INDEX NAME)

423165-23-5 HCAPLUS RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis[3-(1-methylethoxy)-4,1-CN

phenylene]]bis[5-methyl- (9CI) (CA INDEX NAME)

RN 423165-24-6 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(2-ethoxy-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

RN 423165-26-8 HCAPLUS
CN Guanidine, N,N'''-[2,5-furandiylbis(3-propoxy-4,1-phenylene)]bis- (9CI)
(CA INDEX NAME)

$$\begin{array}{c|c} NH & NH \\ \parallel & NH-C-NH_2 \\ \hline \\ OPr-n & OPr-n \\ \end{array}$$

RN 423165-27-9 HCAPLUS CN Guanidine, N,N'''-[2,5-furandiylbis(2-methoxy-4,1-phenylene)]bis- (9CI) (CA INDEX NAME)

RN 423165-30-4 HCAPLUS
CN Guanidine, N,N'''-[2,5-thiophenediylbis(3-methyl-4,1-phenylene)]bis- (9CI)
(CA INDEX NAME)

347191-00-8P 347191-05-3P 347191-08-6P ΙT 347191-11-1P 347191-15-5P 347191-17-7P 347191-19-9P 347191-21-3P 423165-54-2P 423165-55-3P 423165-56-4P 423165-57-5P 423165-58-6P 423165-59-7P 423165-61-1P 423165-64-4P 423165-66-6P 423165-69-9P 423165-71-3P 423165-74-6P

RL: SPN (Synthetic preparation); PREP (Preparation) (reversed amidines for treating, preventing, or inhibiting leishmaniasis)

347191-00-8 HCAPLUS

2-Pyridinecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-, RN CN hydrochloride (2:7) (9CI) (CA INDEX NAME)

### ●7/2 HCl

347191-05-3 HCAPLUS Cyclohexanecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-, RN CN dihydrochloride (9CI) (CA INDEX NAME)

#### **2** HCl

347191-08-6 HCAPLUS Benzenecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-RNphenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME) CN

### •2 HCl

RN 347191-11-1 HCAPLUS
CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis-, hydrochloride (2:7) (9CI) (CA INDEX NAME)

## ●7/2 HCl

RN 347191-15-5 HCAPLUS
CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis[5-methyl-, hydrochloride (4:13) (9CI) (CA INDEX NAME)

### ●13/4 HCl

RN 347191-17-7 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methoxy-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

347191-19-9 HCAPLUS RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-chloro-4,1-CN phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

## ●2 HCl

347191-21-3 HCAPLUS RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3,5-dimethyl-4,1-CN phenylene)|bis-, hydrochloride (4:15) (9CI) (CA INDEX NAME)

### ●15/4 HCl

423165-54-2 HCAPLUS RN

2-Quinolinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-CN phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

RN 423165-55-3 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis[3-(1-methylethoxy)-4,1-phenylene]]bis-, dihydrochloride (9CI) (CA INDEX NAME)

# ●2 HCl

RN 423165-56-4 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis[3-(1-methylethoxy)-4,1-phenylene]]bis[5-methyl-, dihydrochloride (9CI) (CA INDEX NAME)

# ●2 HCl

RN 423165-57-5 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(2-ethoxy-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

RN 423165-58-6 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(2-methoxy-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

### •2 HCl

RN 423165-59-7 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-hydroxy-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

### ●2 HCl

RN 423165-61-1 HCAPLUS CN Guanidine, N,N'''-[2,5-furandiylbis(3-ethoxy-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

## •2 HCl

RN 423165-64-4 HCAPLUS
CN Guanidine, N,N'''-[2,5-furandiylbis[3-(1-methylethoxy)-4,1-phenylene]]bis, dihydrochloride (9CI) (CA INDEX NAME)

#### ●2 HCl

RN 423165-66-6 HCAPLUS CN Guanidine, N,N'''-[2,5-furandiylbis(2-methoxy-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

### ●2 HCl

423165-71-3 HCAPLUS RNGuanidine, N,N'''-[2,5-thiophenediylbis(3-methyl-4,1-phenylene)]bis-, CN dihydrochloride (9CI) (CA INDEX NAME)

### ●2 HC1

423165-74-6 HCAPLUS RN Guanidine, N, N'''-(2, 5-thiophenediyldi-4, 1-phenylene) bis-, dihydrochloride CN (9CI) (CA INDEX NAME)

### ●2 HCl

- ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2003 ACS L12
- 2001:301099 HCAPLUS ΑN
- 135:76736
- DN Diguanidino and "Reversed" Diamidino 2,5-Diarylfurans as Antimicrobial TI
- Stephens, Chad E.; Tanious, Farial; Kim, Susan; Wilson, W. ΑU David; Schell, Wiley A.; Perfect, John R.; Franzblau, Scott G.; Boykin, David W.
- Department of Chemistry, Georgia State University, Atlanta, GA, CS 30303-3083, USA
- Journal of Medicinal Chemistry (2001), 44(11), 1741-1748 SO

```
CODEN: JMCMAR; ISSN: 0022-2623
     American Chemical Society
PΒ
DT
     Journal
LΑ
     English
     27-6 (Heterocyclic Compounds (One Hetero Atom))
CC
     Section cross-reference(s): 1
     CASREACT 135:76736
OS
GΙ
```

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

```
Dicationic 2,5-bis(4-guanidinophenyl)furans, e.g. I, 2,5-bis[4-
    (arylimino) aminophenyl] furans, e.g. II, and 2,5-bis[4-
    (alkylimino)aminophenyl]furans, e.g. III have been synthesized starting
    from 2,5-bis[tri-n-butylstannyl]furan. Thermal melting studies with poly
    dA.bul.dT and the duplex oligomer d(CGCGAATTCGCG)2 demonstrated high DNA
    binding affinities for a no. of the compds. The binding affinities are
    highly dependent on structure and are significantly affected by
    substituents both on the Ph rings of the 2,5-diphenylfuran nucleus and on
    the cationic centers. Of the 17 novel dicationic compds. synthesized, six
    exhibited MICs of 2 .mu.g/mL or less vs. Mycobacterium tuberculosis. Of
    the compds. screened against Candida albicans, three gave MICs of 2
    .mu.g/mL or less (I, I\tilde{I} and IV) and two (I, I\tilde{I}) were fungicidal, unlike a
    std. antifungal drug fluconazole, which was fungistatic. In addn., one of
    the tested compds. II exhibited a MIC of <1 .mu.g/mL against Aspergillus
    fumigatus, while also being a fungicidal against this organism. Finally,
    when evaluated against an expanded fungal panel, compd. IV showed good
    activity against Cryptococcus neoformans and Rhizopus arrhizus.
    fungicidal antituberculostatic amidinophenylfuran; substituent effect DNA
ST
    binding affinity arylfuran cationic; arylfuran amidino guanidino
    antimicrobial agent prepn; furan guanidinophenyl prepn; amidinophenyl
     furan imino prepn
     Imidic acids
IT
    RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
     (Reactant or reagent)
        (esters, thio; prepn. of (naphthylmethyl)thioimidates from
        (bromomethyl) naphthalene and thioamides in synthesis of
        bis(amidinoaryl) furans as antifungicidal and antituberculosis agents)
     Structure-activity relationship
ΙT
        (fungicidal; prepn. of (naphthylmethyl)thioimidates from
        (bromomethyl)naphthalene and thioamides in synthesis of
        bis(amidinoaryl) furans as antifungicidal and antituberculosis agents)
     Thioamides
IT
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (prepn. of (naphthylmethyl)thioimidates from (bromomethyl)naphthalene
        and thioamides in synthesis of bis(amidinoaryl)furans as antifungicidal
        and antituberculosis agents)
     Fungicides
ΙT
```

Tuberculostatics

(prepn. of bis(guanidinoaryl) - and bis(amidinoaryl)furans as antifungal and antituberculosis agents)

IT 347191-26-8P

RL: BYP (Byproduct); PREP (Preparation) (formation of monoamidine byproduct in prepn. of bis(guanidinoaryl)and bis(amidinoaryl)furans as antifungal and antituberculosis agents)

180002-24-8 ΙT

ΙT

RL: RCT (Reactant); RACT (Reactant or reagent) (formation of monoamidine byproduct in prepn. of bis(guanidinoaryl)and bis(amidinoaryl)furans as antifungal and antituberculosis agents) 939-26-4, 2-(Bromomethyl)naphthalene 2227-79-4, Thiobenzamide

```
96898-30-5, Quinoline-2-
    7390-42-3, Cyclohexanecarbothioamide
    carbothioamide
    RL: RCT (Reactant); RACT (Reactant or reagent)
       (prepn. of (naphthylmethyl)thioimidates from (bromomethyl)naphthalene
       and thioamides in synthesis of bis(amidinoaryl)furans as antifungicidal
       and antituberculosis agents)
                                                  347191-25-7P
                  347191-23-5P
                                 347191-24-6P
    347191-22-4P
IT
    RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
     (Reactant or reagent)
        (prepn. of (naphthylmethyl)thioimidates from (bromomethyl)naphthalene
       and thioamides in synthesis of bis(amidinoaryl)furans as antifungicidal
       and antituberculosis agents)
    347190-93-6P 347190-94-7P 347190-95-8P
IT
     347190-96-9P 347190-97-0P 347190-98-1P
     347191-00-8P 347191-03-1P 347191-05-3P
     347191-06-4P 347191-08-6P 347191-11-1P
     347191-13-3P 347191-15-5P 347191-17-7P
     347191-19-9P 347191-21-3P
    RL: BAC (Biological activity or effector, except adverse); BSU (Biological
     study, unclassified); SPN (Synthetic preparation); BIOL (Biological
     study); PREP (Preparation)
        (prepn. of bis(guanidinoaryl) - and bis(amidinoaryl)furans as antifungal
        and antituberculosis agents)
              586-78-7, 4-Bromo-1-nitrobenzene 7149-70-4,
IT
                                      29682-39-1, 1-Bromo-2-chloro-4-
     1-Bromo-2-methyl-4-nitrobenzene
     nitrobenzene 53906-84-6, 4-Bromo-3,5-dimethylnitrobenzene
                                                                  77337-82-7,
                                       107819-90-9 193361-76-1,
     1-Bromo-2-methoxy-4-nitrobenzene
     2,5-Bis(tributylstannyl)furan
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (prepn. of bis(guanidinoaryl) - and bis(amidinoaryl) furans as antifungal
        and antituberculosis agents)
                                                347190-78-7P
                                                               347190-79-8P
                                 251577-90-9P
                   56297-30-4P
     53715-17-6P
ΙT
                                                  347190-83-4P
                                                                 347190-84-5P
                                   347190-82-3P
                    347190-81-2P
     347190-80-1P
                    347190-86-7P 347190-87-8P 347190-88-9P
     347190-85-6P
     347190-89-0P 347190-90-3P 347190-91-4P
                                 347191-01-9P
     347190-92-5P 347190-99-2P
     347191-02-0P 347191-04-2P 347191-07-5P
                    347191-10-0P 347191-12-2P
     347191-09-7P
     347191-14-4P 347191-16-6P 347191-18-8P
     347191-20-2P
     RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
     (Reactant or reagent)
        (prepn. of bis(guanidinoaryl) - and bis(amidinoaryl)furans as antifungal
        and antituberculosis agents)
                                1620-77-5, 2-Cyano-5-methylpyridine
     100-70-9, 2-Cyanopyridine
ΤT
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (prepn. of pyridinethiocarboxamide from (cyano)pyridine and
        thioacetamide in synthesis of bis(amidinoaryl) furans as antifungicidal
        and antituberculosis agents)
     5346-38-3P, 2-Pyridinecarbothioamide
                                             334017-98-0P
IT
     RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
      (Reactant or reagent)
         (prepn. of pyridinethiocarboxamide from (cyano)pyridine and
        thioacetamide in synthesis of bis(amidinoaryl)furans as antifungicidal
        and antituberculosis agents)
              THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE.CNT
 (1) Apted, F; Pharmacol Ther 1980, V11, P391 MEDLINE
 (2) Bailly, C; Anti-Cancer Drug Design 1999, V14, P47 HCAPLUS
 (3) Bajic, M; Heterocyclic Comm 1996, V2, P135 HCAPLUS
 (4) Beerman, T; Biochim Biophys Acta 1992, V1131, P52
 (5) Bell, C; Antimicrob Agents Chemother 1990, V34, P1381 HCAPLUS
 (6) Bell, C; Antimicrob Agents Chemother 1991, V35, P1099 HCAPLUS
```

- sackey 10 / 008535 (7) Bell, C; Antimicrob Agents Chemother 1993, V37, P2668 HCAPLUS (8) Blagburn, B; Antimicrob Agents Chemother 1991, V35, P1520 HCAPLUS (9) Blagburn, B; J Parasitol 1998, V84, P851 HCAPLUS (10) Boykin, D; J Med Chem 1995, V38, P912 HCAPLUS (11) Boykin, D; J Med Chem 1998, V41, P124 HCAPLUS (12) Bryceson, A; Trans R Soc Trop Med Hyg 1985, V79, P705 MEDLINE (13) Collins, J; J Med Chem 1998, V41, P2858 HCAPLUS (14) Collins, L; Antimicrob Agents Chemother 1997, V41, P1004 HCAPLUS (15) Das, B; J Med Chem 1976, V20, P531 (16) Del Poeta, M; Antimicrob Agents Chemother 1998, V42, P2495 HCAPLUS (17) Del Poeta, M; Antimicrob Agents Chemother 1998, V42, P2503 HCAPLUS (18) Del Poeta, M; J Antimicrob Chemother 1999, V44, P223 HCAPLUS (19) Dykstra, C; Antimicrob Agents Chemother 1994, V38, P1890 HCAPLUS (20) Fitzgerald, D; J Biol Chem 1999, V274, P27128 HCAPLUS (21) Francesconi, I; J Med Chem 1999, V42, P2260 HCAPLUS (22) Fulton, J; Ann Trop Med Parasitol 1940, V34, P53 HCAPLUS (23) Guerri, A; Nucleic Acids Res 1998, V26, P2873 HCAPLUS (24) Henderson, D; Nature Med 1995, V1, P525 HCAPLUS (25) Hildebrandt, E; J Euk Microbial 1998, V45, P112 HCAPLUS (26) Hughes, W; Antimicrob Agents Chemother 1974, V5, P289 HCAPLUS (27) Ivady, V; Monatschr Kinderheilkd 1958, V106, P10 (28) Karrer, P; Helv Chim Acta 1945, V28, P820 HCAPLUS (29) King, H; Ann Trop Med Parasitol 1938, V32, P177 HCAPLUS (30) Kirk, R; Ann Trop Med Parasitol 1940, V34, P181 (31) Kravtsov, D; J Organomet Chem 1972, V36, P227 HCAPLUS (32) Kumar, A; Heterocyclic Comm 1999, V5, P301 HCAPLUS (33) Laughton, C; Biochemistry 1996, V35, P5655 HCAPLUS (34) Lindsay, D; Antimicrob Agents Chemother 1991, V35, P1914 HCAPLUS (35) Ling, C; J Am Chem Soc 1994, V116, P8784 HCAPLUS (36) Lourie, E; Ann Trop Med Parasitol 1937, V31, P435 HCAPLUS (37) Lourie, E; Ann Trop Med Parasitol 1939, V33, P289 HCAPLUS (38) Lourie, E; Ann Trop Med Parasitol 1939, V33, P305 (39) Mazur, S; J Mol Biol 2000, V300, P321 HCAPLUS (40) McGinnis, M; Laboratory Handbook of Medical Mycology 1980, P431 (41) Moynehan, T; J Chem Soc 1962, P2637 HCAPLUS (42) National Committee For Clinical Laboratory Standards; Reference method for broth dilution susceptibility testing of yeasts Document M27-T Tentative standard 1995 (43) Shearer, B; Tetrahedron Lett 1997, V38, P179 HCAPLUS (44) Su, W; Synth Commun 1996, V26, P407 HCAPLUS (45) Tanious, F; J Biomol Struct, Dyn 1994, V11, P1063 HCAPLUS (46) Taylor, E; J Am Chem Soc 1960, V82, P2656 HCAPLUS (47) Trent, J; J Med Chem 1996, V36, P4554 (48) Wepster, B; Recl Trav Chim 1954, V73, P809 HCAPLUS (49) Wilson, W; J Am Chem Soc 1998, V120, P10310 HCAPLUS 347190-93-6P 347190-94-7P 347190-95-8P 347190-96-9P 347190-97-0P 347190-98-1P 347191-00-8P 347191-03-1P 347191-05-3P 347191-06-4P 347191-08-6P 347191-11-1P 347191-13-3P 347191-15-5P 347191-17-7P 347191-19-9P 347191-21-3P RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation) (prepn. of bis(guanidinoaryl) - and bis(amidinoaryl) furans as antifungal
  - and antituberculosis agents)

    RN 347190-93-6 HCAPLUS

    CN Guanidine, N,N'''-(2,5-furandiyldi-4,1-phenylene)bis-, dihydrochloride

    (9CI) (CA INDEX NAME)

RN 347190-94-7 HCAPLUS CN Guanidine, N,N'''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

### •2 HCl

RN 347190-95-8 HCAPLUS CN Guanidine, N,N'''-[2,5-furandiylbis(3-methoxy-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} NH & NH \\ \parallel & \parallel \\ NH-C-NH_2 \\ \hline OMe & OMe \\ \end{array}$$

## ●2 HCl

RN 347190-96-9 HCAPLUS CN Guanidine, N,N'''-[2,5-furandiylbis(3-chloro-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

### •2 HCl

RN 347190-97-0 HCAPLUS CN Guanidine, N,N'''-[2,5-furandiylbis[3-(trifluoromethyl)-4,1-phenylene]]bis-, dihydrochloride (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} NH & NH & NH \\ \parallel & \parallel & \parallel \\ H_2N-C-NH & & NH-C-NH_2 \\ \hline \\ CF_3 & & CF_3 \end{array}$$

### ●2 HCl

RN 347190-98-1 HCAPLUS
CN Guanidine, N,N'''-[2,5-furandiylbis(3,5-dimethyl-4,1-phenylene)]bis-,
dihydrochloride (9CI) (CA INDEX NAME)

### ●2 HCl

RN 347191-00-8 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-, hydrochloride (2:7) (9CI) (CA INDEX NAME)

## ●7/2 HCl

347191-03-1 HCAPLUS RN

Benzenecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-, CN dihydrochloride (9CI) (CA INDEX NAME)

### ●2 HCl

347191-05-3 HCAPLUS RN

Cyclohexanecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-, CN dihydrochloride (9CI) (CA INDEX NAME)

#### ●2 HC1

347191-06-4 HCAPLUS RN

Ethanimidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-, dihydrobromide CN (9CI) (CA INDEX NAME)

# ●2 HBr

RN 347191-08-6 HCAPLUS
CN Benzenecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

# ●2 HCl

RN 347191-11-1 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis-, hydrochloride (2:7) (9CI) (CA INDEX NAME)

# ●7/2 HCl

RN 347191-13-3 HCAPLUS
CN 3-Isoquinolinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

RN 347191-15-5 HCAPLUS
CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis[5-methyl-, hydrochloride (4:13) (9CI) (CA INDEX NAME)

## ●13/4 HCl

RN 347191-17-7 HCAPLUS
CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methoxy-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

### •2 HCl

RN 347191-19-9 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-chloro-4,1-phenylene)]bis-, dihydrochloride (9CI) (CA INDEX NAME)

RN 347191-21-3 HCAPLUS CN 2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3,5-dimethyl-4,1-phenylene)]bis-, hydrochloride (4:15) (9CI) (CA INDEX NAME)

## ●15/4 HCl

347190-87-8P 347190-88-9P 347190-89-0P ΙT 347190-90-3P 347190-91-4P 347190-92-5P 347190-99-2P 347191-02-0P 347191-04-2P 347191-07-5P 347191-09-7P 347191-12-2P 347191-14-4P 347191-16-6P 347191-18-8P RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT 347191-20-2P (Reactant or reagent) (prepn. of bis(guanidinoaryl) - and bis(amidinoaryl) furans as antifungal and antituberculosis agents) 347190-87-8 HCAPLUS RN Carbamic acid, [2,5-furandiylbis(4,1-phenylenenitrilomethanetetrayl)]tetra CN kis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

 ester (9CI) (CA INDEX NAME)

RN 347190-89-0 HCAPLUS
CN Carbamic acid, [2,5-furandiylbis[(3-methoxy-4,1-phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

RN 347190-90-3 HCAPLUS CN Carbamic acid, [2,5-furandiylbis[(3-chloro-4,1-phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

RN 347190-91-4 HCAPLUS
CN Carbamic acid, [2,5-furandiylbis[[3-(trifluoromethyl)-4,1-phenylene]nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)

347190-92-5 HCAPLUS RN

Carbamic acid, [2,5-furandiylbis[(3,5-dimethyl-4,1phenylene)nitrilomethanetetrayl]]tetrakis-, tetrakis(1,1-dimethylethyl) CN ester (9CI) (CA INDEX NAME)

347190-99-2 HCAPLUS 2-Pyridinecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis- (9CI) RN CN (CA INDEX NAME)

347191-02-0 HCAPLUS Benzenecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis- (9CI) RN CN (CA INDEX NAME)

347191-04-2 HCAPLUS RN

Cyclohexanecarboximidamide, N,N''-(2,5-furandiyldi-4,1-phenylene)bis-CN (9CI) (CA INDEX NAME)

347191-07-5 HCAPLUS RN

Benzenecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-CN phenylene)]bis- (9CI) (CA INDEX NAME)

347191-09-7 HCAPLUS RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-CN phenylene)]bis- (9CI) (CA INDEX NAME)

347191-12-2 HCAPLUS

3-Isoquinolinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-RN CN phenylene)]bis- (9CI) (CA INDEX NAME)

347191-14-4 HCAPLUS

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methyl-4,1-phenylene)]bis[5-methyl- (9CI) (CA INDEX NAME) RN CN

347191-16-6 HCAPLUS RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-methoxy-4,1-CN phenylene)]bis- (9CI) (CA INDEX NAME)

347191-18-8 HCAPLUS RN

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3-chloro-4,1-CN phenylene)]bis- (9CI) (CA INDEX NAME)

347191-20-2 HCAPLUS

2-Pyridinecarboximidamide, N,N''-[2,5-furandiylbis(3,5-dimethyl-4,1-RN CN phenylene)]bis- (9CI) (CA INDEX NAME)

COPYRIGHT 2003 ACS L12 ANSWER 5 OF 5 HCAPLUS

1977:433436 HCAPLUS ΑN

87:33436

In search of anti-Trypanosoma cruzi drugs: new leads from a mouse model DNΤI

Kinnamon, Kenneth E.; Steck, Edgar A.; Hanson, William L.; Chapman, Willie ΑU L., Jr.

Div. Med. Chem., Walter Reed Army Inst. Res., Washington, DC, USA CS

Journal of Medicinal Chemistry (1977), 20(6), 741-4 SO CODEN: JMCMAR; ISSN: 0022-2623

Journal DT

LA English

1-3 (Pharmacodynamics) CC

GΙ

Nine of 25 compds. selected from >200,000 chems. had significant AΒ suppressive activity against parasites in the blood of a T. cruzi mouse model. Five 8-aminoquinoline derivs., a 7-aminoquinoline deriv. (I) [62658-31-5], p-methylbenzyltriphenylphosphonium chloride [1530-37-6], and trans-5-amino-3-[2-(5-nitro-2-furyl)vinyl]-1,2,4-oxadiazole [28754-68-9] had activity .gtoreq. nifurtimox. For the 1st time, suppressive activity against T. cruzi has been reported for a 7-aminoquinoline deriv., a phosphonium salt, and tris(4-aminophenyl)carbonium pamotate [2706-47-0].

trypanosomacide screen mouse model; aminoquinoline trypanosomacide; ST phosphonium salt trypanosomacide

Trypanosomicides IΤ

(mouse model for screening of)

IT Mouse

(trypanosomacide screening in, as model)

Molecular structure-biological activity relationship ΙT

(trypanocidal, mouse model for screening of)

21738-42-1 21873-45-0 50823-61-5 52-52-8 703-95-7 14769-73-4 IT 60504-61-2 **62658-26-8** 62658-27-9 60368-04-9 51123-83-2 62658-29-1

RL: BIOL (Biological study)

(as trypanosomacide)

62658-17-7 62658-18-8 62658-20-2 2706-47-0 28754-68-9 IT 1530-37-6 62658-25-7 62658-23-5 62658-31-5 62658-22-4 62658-21-3 62705-19-5

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)

(trypanosomacidal activity of)

62658-26-8 ΙT

RL: BIOL (Biological study)

(as trypanosomacide)

62658-26-8 HCAPLUS RN

Guanidine, N,N'''-[(tetrahydro-2,5-furandiyl)di-4,1-phenylene]bis-, CN dihydrochloride (9CI) (CA INDEX NAME)